

Epidemiology of Neonatal Sepsis Caused by Group B Streptococci and Other Bacterial Pathogens Among Alaska Newborns

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**Background:** Group B streptococci (GBS) are a major cause of neonatal sepsis. Disease in newborns can be prevented using intrapartum antibiotic prophylaxis (IAP). GBS neonatal disease declined dramatically in several areas from 1993 to 1998. Alaska hospitals implemented IAP in the early 90s. The burden of neonatal GBS disease and the impact of IAP has not been evaluated for Alaska populations.

**Methods:** We conducted a retrospective review of neonatal sepsis patients admitted to all hospitals with neonatal intensive care units in Alaska during 1991 to 1998. Denominator data for Alaska newborns were obtained through birth certificate records. Neonatal sepsis was defined as isolation of a bacterial pathogen from blood or cerebrospinal fluid. We defined early-onset disease and late-onset disease as that occurring in infants less than 7 days old, and 7-30 days old, respectively. Chi square for trend was used for incidence comparisons.

**Results:** Rates of early-onset GBS disease decreased from 0.74/1000 live births in 1993-1994 to 0.20/1000 live births in 1997-1998 ( $\chi^2$  for trend=6.6,  $p=0.009$ ) and were similar for Alaska Natives and non-Natives. Rates of early-onset sepsis caused by other pathogens were higher among Alaska Natives as compared with non-Natives (0.7 vs 0.3 cases/1000 live births,  $p=0.05$ ). Among 86 cases of sepsis, GBS caused 41.9%, *Escherichia coli* 15.1%, *Staphylococcus aureus* 8.1%, *Enterobacter cloacae* 5.8%, *Haemophilus influenzae* 5.8%, and *Streptococcus*

*pneumoniae* 2.3%. Patients with sepsis caused by other pathogens were more likely to be premature and have low birth weight ( $p=0.001$ ). Mortality was higher among patients with sepsis caused by other pathogens than among GBS patients (22% vs 8.3%,  $p=0.09$ ).

**Conclusion:** GBS is the main cause of neonatal sepsis among newborns in Alaska, affecting both Alaska Native and non-Native populations. Early-onset sepsis caused by other organisms has a higher incidence among Alaska Natives and is more often a disease of prematurity. Decreasing rates of GBS disease among newborns in Alaska may be related to the introduction of IAP policies.